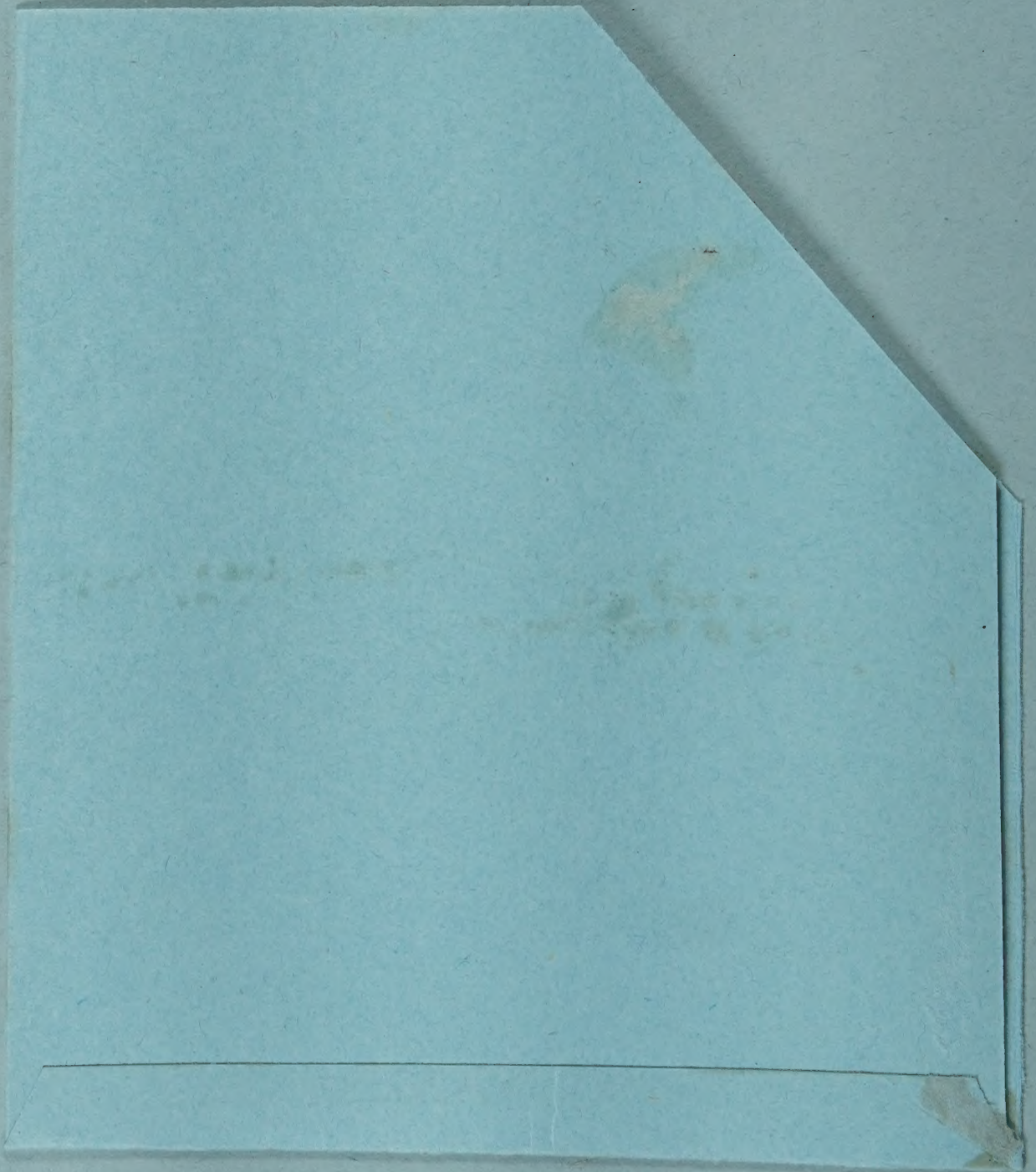


THERAPEUTIC DIET IN HEALTH PRACTICE



CHRISTIAN MEDICAL ASSOCIATION OF INDIA
POST BOX 24, NAGPUR
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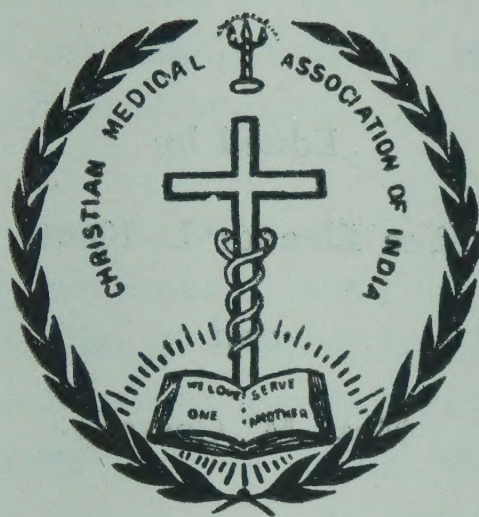
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THE THERAPEUTIC DIET
IN
HEALTH PRACTICE



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CHRISTIAN MEDICAL ASSOCIATION OF INDIA
POST BOX 24, NAGPUR
MAHARASHTRA 440 010

Published by
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FOREWORD

The Christian Medical Association of India is the official Protestant Health Agency in India which has a membership of over 350 hospitals and about 5000 Christian health professionals. This Association is concerned by making health a reality for the people of India and preparing people for this task. Throughout India the smaller hospitals and health centres through which our members work are known as centres of commitment, concern, compassion and competence. We are able to serve people in these centres and also extend our commitment to the promotion and maintenance of health in the community.

This booklet has been written with the small hospital, health centre and General Practitioner in mind. It is simple, basic and is easy to use. I would like to congratulate Mrs. Manorama Jones and her colleagues who have put together this booklet and recommend it to our members and the public at large.

Dr. DALEEP S MUKARJI

General Secretary

Christian Medical Association of India

INTRODUCTION

Diets in therapy play an important part in the management of certain clinical conditions. This is now increasingly recognized. Therapeutic diets therefore, have become a necessity in correcting certain clinical disorders. Equally so, balanced food intake is known to provide adequate health. Proper food habit and intake of essential food commodities at every stage of growth of the child and during pregnancies of mothers are now accepted for their well being.

There has been repeated requests from the institutions affiliated to the Christian Medical Association of India to compile therapeutic diets for health practice. These are now compiled and are made available for use.

In compiling these therapeutic diets, attention was given to ensure that: they are in line with the diets that people are commonly used to and the food commodities which are easily available, and at a cost that is within the reach of many.

While the therapeutic diets contained in the booklet do not cover all the requirements to manage clinical conditions which require dietetic management, what has now been brought together in this publication meets the needs of many health practitioners to cater to most of the common clinical conditions which they come across in everyday practice. It is hoped that this publication will be found useful.

Any suggestions and comments that can be offered will be helpful in revising this booklet when a new edition is brought out in the future.

I am grateful to the Christian Medical Association of India in helping me to compile the Therapeutic diets for health practice.

Mrs. MANORAMA JONES

Nutrition Officer

Christian Medical Association of India

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SOME THERAPEUTIC DIETS

1. TYPES OF DIETS USED IN HOSPITALS

A. Various types of diets are usually available for hospital patients according to their special needs. They are as follows.

1. **REGULAR OR FULL DIET** — Vegetarian or non-vegetarian. This is for patients whose diet does not require any modifications. The diet should be well-balanced including all essential nutrients.

2. **SOFT OR SEMI-SOLID DIET** — is a step between full liquid and regular diet. These foods are easily digested and are lower in roughage. The soft diet should be nutritionally adequate. Patients who are unable to chew require a diet of well minced foods, based on a regular type diet. This is called a **mechanically soft diet**.

3. **LIQUID DIET** — Liquid diets are given to patients who cannot tolerate solid food. Generally a patient would be on such a diet for a short time only, so nutrient deficiency would be made up when the patient goes on a full diet.

Liquid diets are of two types

a. **Clear liquid (fluid) diet** may be used in acute illness or after surgical procedures. Foods permitted are black tea or weak black coffee, fat-free broth, clear strained soups, meat & yeast extracts, soda water or other aerated beverages, clear fruit juice, gelatine (jelly). Sugar and glucose may be added to beverages or juices. The diet is continued for one or two days only in most patients.

b. **Full liquid diet** : This diet is used when a patient cannot swallow solid food. It may also be a step between clear liquid and soft diet. If a patient is to remain on such a diet for a long time care must be taken to include all essential nutrients.

Milk usually forms the base for such a diet. Six or more feedings should be given daily. To increase the protein content, skimmed milk powder or whole egg may be added

(e.g. egg flip). Pureed meat or liver may be added to broth. Pureed vegetables may also be added to soups for additional vitamins and flavour.

To increase the calorie content, ghee or oil may be added to soups, conjee or cereal mixtures. Glucose, lactose or corn syrup may be added to fruit juice, milk drinks or ice-cream to increase calories. As they are less sweet they may be used in larger quantities.

If the patient cannot tolerate food by mouth the food may be given through a nasal or other type of tube feeding. The feeding should be liquid enough to pass easily through the tube.

1. SOME RECIPES FOR LIQUID DIET

a. Albumin Water

INGREDIENTS

Egg — 1

Water — 250 ml

Lime, Salt, Sugar — to taste

PROCEDURE

The white of an egg is beaten well, then the lukewarm water is added and mixed. Lime, salt or sugar may be added to taste.

REMARKS

Albumin water can be given to typhoid patient. It is also used for the patient who cannot digest carbohydrate foods.

The avidin of an egg white must be destroyed by raising the temperature to 30° C.

b. Whey Water

INGREDIENTS

Milk — 250 ml.

Lime juice OR Citric acid — 1 tsp.

PROCEDURE

The milk is allowed to boil. Add lime juice or citric acid to the boiling milk. The casein, separates out and a clear fluid is left.

This clear fluid is known as **Whey**.

REMARKS

Whey water contains simple lacto-albumin water, soluble lactose and all the water-soluble vitamins and minerals, which are easily absorbed by the body and easily digested. Whey is often used in making infant foods or meals for invalids and is also given to the patients in case of liquid diarrhoea as well as to surgical patients. It may also be given to children suffering from diarrhoea due to protein deficiency

The green colour is due to the presence of riboflavin.

2. TUBE FEEDING

It is important to remember that continuous intravenous feeding with either glucose or saline can lead to marked deficit of potassium.

Potassium is best administered orally through the Ryles tube as fruit juice or coconut water.

In the absence of dehydration or marked extra fluid loss, a fluid intake of about 2500 ml suffices for an adult.

If this is given intravenously, the ratio should be 3 pints of glucose to 2 pints of normal saline.

Maintaining Nutrition

The problem arises in patients who are unconscious for many days as after severe head injuries. A high CHO intake of over 150 gm should be maintained. Protein rich powders like Complan, Proteinex, Casilan etc. should be given through the Ryles Tube ensuring protein intake of at least 50 gm. to 75 gm. a day.

In these patients where oral feeds are impossible due to some reason, the maintenance of proper nutrition may pose grave problems.

Special amino acid mixtures are now available for intravenous use. These are expensive and availability is limited.

Tube feeding is carried out most commonly by nasogastric tubes. Other methods which are used occasionally in special cases are, rectal feeding, gastrostomy (an artificial opening through the abdominal wall into the stomach through which a feeding tube can be passed).

The daily fluid requirement for an adult is about 2500-3000 ml and can be easily provided by tube feeding. The diets used in tube feeding may be of three types.

1. High CHO
2. High CHO with normal protein,
3. High protein high calorie diet.

Composition of the tube feeds (per day) for adult

I. High Carbohydrate (No protein) Feed

Water — 1.5 litres
Glucose — 300 gm.
Sucrose — 100 gm.
Orange juice — 1 litre
Electrolytes — as required
Vitamins — as required.

II. High Carbohydrate — Moderate

Fat and Protein Feed
Cow's Milk — 1.5 litre
Barley Water — 1.0 litre
Glucose — 300 gm.
Sucrose — 100 gm.

III. High Calorie — High protein feed

Milk (Cow's) — 1.5 litre
Evaporated Milk — 1000 gm.
Glucose — 200 gm.

Electrolytes

Electrolytes such as Sodium, Chloride, Potassium are easily added to the feed depending on the patient.

Vitamin

The daily requirements of all essential vitamins can be given in the feed, in liquid form.

Tube Feeding in Jejunostomy

Jejunostomy (incision of the jejunum to make an opening through which food can be administered in case of cancer of the duodenum).

In jejunostomy feeding four conditions are important for such feedings to imitate the natural process.

- i) The protein should be partly digested (Peptonised)
This is difficult without adequate equipment, but ordinary milk can be used if given slowly at the beginning.
- ii) Sugar concentration should not exceed 10%. (not more than 1 tsp to 35 ml. fluid)
- iii) Fat content should be low. (use skimmed milk)
- iv) Food should be given by drip at body temperature.

3. SOME RECIPES FOR SEMI-SOLID DIET OR LIGHT DIET

a. Dhalia (Broken Wheat)

INGREDIENTS

Dhalia — 1 tbsp.

Milk — 200 ml.

Sugar — to taste

Flavouring agents — Cardamom, bay leaf (1 each)

PROCEDURE

Roast the dhalia in a dry pan to improve the flavour, and soak for half hour to minimise the cooking time. To the liquid add flavouring ingredients to dhalia and let it boil at low temperature. When dhalia is cooked add sugar and continue cooking till the porridge has no raw taste.

Raisins, pista etc., may be added if available.

REMARKS

It is a nutritious food which can easily be used for breakfast. It can be given to most of the patients.

b. Oat Porridge

INGREDIENTS

Oat — 1 tbsp

Milk — 250 ml.

Sugar — according to taste. Flavouring agent — Cardamom, bay leaf (1 each)

Raisins, Almonds, Pista — may also be added to improve the taste.

PROCEDURE

To the liquid add flavouring agents and cereal (oat) and allow to boil for about 20-25 minutes at a low temperature. When cereal becomes cooked, and the porridge has coating consistency, sugar may be added. Raisins, pista, almond may be added as decorations.

Porridge should be cooked over low-flame. If the flame control is not possible it should be cooked in water bath. If the cereal is suji, instead of soaking, it should be roasted dry, and then cooked.

THERAPEUTIC OR MODIFIED DIETS

Such diets include modification of the regular diet to meet the specific body requirements in connection with the disease. The amounts of certain nutrients may need to be increased or restricted.

In planning such diets for patients the person's food habits, customs and preferences should be taken into consideration in order that he/she will readily accept any necessary changes.

The patient must be given education regarding the changes necessary, the reason for the special diet, and what certain restrictions are necessary. Quantities of food should be carefully weighed or measured and shown to the patient so that he may become familiar with the amount he may eat. This is especially important for diabetic patients.

ABBREVIATIONS USED THROUGHOUT

CHO — Carbohydrate.

tbsp. — 1 tablespoon of 15 ml. measure.

tsp. — 1 teaspoon of 5 ml measure.

g or gm — gram

1000 gm — 1 kilogram

ml — millilitre (1000 ml — 1 litre)

II. DIET THERAPY IN FEVERS

1. DIETARY PRINCIPLE FOR FEVER

Protein

During fever there is more excretion of nitrogenous substances, because tissue protein rapidly metabolises. So to maintain nitrogen balance, more protein should be included.

CHO

Should be given in the form of glucose, sugar. It should be given with fluid to provide energy, to meet the loss.

Fat

Fat should not be increased in the diet during fever.

Water

During fever there is excess loss of water by perspiration, increased excretion of urine.

So to meet the fluid loss **extra fluid should be given**. Patients feel thirsty when there is loss of fluid in the body but in case of unconscious patient fluid has to be given through nasal tube or by intra-venous route.

Vitamins and minerals

There is a chance of deficiency of vitamins and minerals due to fever. During fever mixed or balanced diet may be difficult to maintain and therefore vitamins and minerals should be supplemented (like multivitamin, Iron etc.)

In early stages diet should be fluid in character, given at frequent intervals every 1 hour. Glucose should be followed by saturated milk or skimmed milk.

If the patient is able to take solid food, a light, easily digestible diet, taken at frequent intervals may be better tolerated than fluids. Also solid food is higher in nutrients for the same bulk, than fluids.

2. DIET FOR TYPHOID

Dietary Principle of Typhoid with fever

Fluid diet

1. Diet should be given at frequent intervals in the liquid form.

2. Diet should contain high calories with minerals and vitamins. It is observed that high calories should be given to help the body to tolerate the illness and to prevent further complication of secondary infection, and to develop body resistance against other diseases, so calories should be given in liberal amounts.

3. Foods should not be fried and the diet should be non-spicy, non-irritating and non-seedy and low fibre. So the diet should be bland diet with low fibre for typhoid patient. Due to fever and loose motion, the patient loses lots of fluid. So fluid should be given in order to maintain water balance. If necessary plain water, lemonade and glucose can be given at frequent intervals to maintain water balance of the body. The diet for the typhoid patient for the first week should consist of liquid diet. (See Liquid Diets.)

Convalescent Diet for Typhoid Patient

COMPOSITION

Calories — 2000
Protein — 80 gm.
CHO — 285 gm.
Fat — 60 gm.

FOOD FOR ONE DAY

Soft Boiled rice — (4 oz) 120 gm.
Bread — 6 slices
Boiled potatoes — 6
Other non-residue veg — (8 oz) 210 gm.
Milk and milk products $\frac{1}{2}$ litre.
Tender meat or chicken or fish (4 oz) 120 gm.
Custard
Sugar

3. DIET FOR TUBERCULOSIS

(High Protein and High Calorie Diet)

Diet Principles in Tuberculosis

1. Patients suffering from tuberculosis for long period lose body weight gradually unless diet is adequate, and the loss is due to the rise of temperature. Therefore diet for this patient must be high calorie diet. (up to 80 calories per Kg body weight).

2. Severe wasting of muscle protein usually occurs and so to build up wasting muscle protein, the diet should be of high protein.

3. CHO, Vitamins and minerals : should be more than the actual average requirements.

During actual fever the intake may not be sufficient to provide all nutrients required because they are not able to eat. Therefore when there is low fever the dietary requirement should be more.

4. Food should not be fried. If patient is unable to take large amount at a time the food should be divided and given in small amounts at frequent intervals.

5. Food should be properly cooked, easily digestible and at the same time palatable.

High Calorie, High Protein, High Carbohydrate Diet for Tuberculosis Patients

Calories : 2800, Protein : 110 gm., Fat 70 gm.

Sample menu :

Cereal — 250 gm.

Bread — 4 slices

Pulse (dhal) — 60 gm.

Potato or root vegetable — 120 gm.

Leafy Green vegetable — 90 gm.

Other vegetable — 120 gm.

Fish or Meat — 250 gm. ($\frac{1}{4}$ k.g.)

Eggs — 2

Milk or milk products 1,000 ml. (1 litre)

Sugar — 2 tbsp.

Butter Oil — 3 tbsp.

Suggested Meal Pattern

Breakfast

e.g. 3 idlis OR

3 chappatis.

1 egg — (soft boiled or poached).

Milk — 200 ml.

Fruit juice (Orange juice) — 1 small glass.

Mid morning

2 slices bread with butter & jam Beverage using 200 ml. milk.

Noon

Rice — 75 gm (uncooked)
Meat preparation or fish — 1 serving (125) gm.
Dhal preparation using 30 gm. (uncooked)
Root veg. or potato — 1 serving.
Green Vegetable — 1 serving
Curds — 100 ml.
Fruit — 1 serving

Mid-afternoon

200 ml. milk
2 plain biscuits or 2 slices bread
(eg. glucose, arrowroot)

Dinner

Cereal Preparation — Rice 1½ cups or
3 Chappatis with ghee.
Fish, meat or chicken — 125 gm.
Vegetable — 1 serving
Thick dhal — 1 serving
Custard (made with 200 ml. milk & 1 egg)

Bedtime

Milk drink using 100 ml.
Plain biscuits

III. DISEASES OF THE GASTRO-INTESTINAL TRACT

1. PEPTIC ULCER

Ulcer forms in the region of the gastro-intestinal tract where the gastric juice comes in direct contact with the mucous membrane and this condition is known as Peptic Ulcer. Such Ulcers usually occur in the duodenum (duodenal ulcer) or in the stomach (Gastric Ulcer).

A. Dietary Principles of Ulcer

1. The diet should be without spice (i.e. Bland diet) It is used to neutralise the acidity and reduce gastric secretion and avoid gastro-intestinal irritation.

Condiments and Spices should be completely avoided as they tend to irritate the gastro intestinal tract and aggravate the ulcer.

2. The diet should contain **low fibre**. Only milled cereals with low fibre content should be consumed.

3. **Beverages** : Beverages such as coffee and tea stimulate gastric secretion, so only weak tea with plenty of milk, or cocoa, ovaltine, bournvita etc, are permitted.

4. **Alcohol** : Alcoholic drinks should be completely avoided as they stimulate gastric secretion.

5. **Protein** : High protein intake (50% of the dietary protein should be from milk because milk soothes the mucous membrane and neutralizes the acid and also it is nutritious).

6. **Calories** : The calorie intake should be adequate according to age, sex and occupation.

7. Feeding of diet has to be frequent (every 3hours) **Never allow the stomach, to be empty.** By keeping some bland food in the stomach, the gastric juices will not attack the ulcer causing further irritation or erosion.

Foods Permitted

1. Milled cereals (milled rice, refined wheat flour and semolina, Rava or Suji)
2. Dhal (decuticled split legume removing outer layer of the skin)
3. Milk

4. Egg-Soft boiled, poached, scrambled.
5. Tender Vegetables (free from seeds and skin)
6. Meat and Fish in limited amounts.
7. Ripe fruits without fibre (without skin and seeds)
8. Fats and oils.
9. Sugar, honey, jaggery
10. Biscuits. (Plain salt or sweet)

Foods not Permitted

Whole cereals, and whole millets
 Legumes with husk (Bengal gram, field bean, Cowgram,
 Dried peas etc.)
 Vegetables containing fibres (i.e. Vegetables with seeds or
 skin) raw onion, garlic etc.
 Spices and condiments and pickles.
 Meat soups and Extracts
 Fried foods
 Alcohol and alcoholic drinks
 Chewing Betal leaves, arecanut and tobacco.

Diet for Adults Suffering from Peptic Ulcer

Food Stuffs	Vegetarian gm	Non-Vegetarian gm
Milled rice and refined wheat flour or bread and biscuits, after removing the husk	200	200
Dhal (decuticled split legumes)	50	50
Milk	1800	1500
Cheese	50	..
Eggs	..	30
Meat or lean fish	..	60
Fats and Oils (Vegetable Oil rich in E.F.A.)	60	60
Sugar	60	60 (4 tbsp.)
Tender Vegetables (i.e. without skin and seeds)	50	50 (1/2 cup)
Potatoes	50	50 (1 small)
Ripe fleshy fruits (bananas, apple and mango without skin and seeds)	100	100

Note : One vitamin C tablet (100 mg) may be taken once daily).

Sample Menu for Peptic Ulcer (Vegetarian)

Morning 6.00 a.m.

Milk — 1 cup with sugar (200 ml.)

Breakfast

Bread — 2 slices

Butter — 2 tsp.

Cheese — 2 slices (25 gm.)

Milk — 1 cup (200 ml)

9.00 a.m.

Ripe banana milk shake — 1 cup (200 ml.)

12.00 Noon-lunch

a. Soft cooked rice or double boiled rice with soft boiled and mashed dhal — 1 serving.

OR

Soft Bread with Cheese or butter — 1 serving

OR

Idlis with milk or cream with sugar — 1 serving

b. Boiled potatoes or boiled carrots or boiled beetroot — 1 each — 1 serving.

c. Milk Pudding — 1 serving.

3.00 p.m.

Fruit salad (of ripe bananas, ripe papaya with milk or cream or custard with sugar)

6.00 p.m.

Milk with sugar — 1 cup (200 ml.)

8.00 p.m.

a. Soft cooked rice (double boiled) with softly cooked and mashed dhal — 1 serving

b. Boiled green or yellow vegetables — each (without skin and seeds which may be sieved and pureed with butter)

c. Milk Pudding — $\frac{1}{2}$ cup (100 ml.) or ripe guava (cooked) without seeds and skin or ripe papaya or ripe mango without skin and seed — 1 serving

2. DIET FOR DIARRHOEA

Dietary Principles

1. High Protein diet must be given because there is constant loss of protein from the body (High protein also helps to resist infection).

2. Diet must not contain any fibre because the fibre irritates the wall of the mucous membrane and increases peristalsis.

3. Diet must be bland in character (non-spicy)

4. It must not be fried.

5. Diet should be fluid or semi-solid in character, according to the degree of diarrhoea.

6. Diet must contain sufficient amount of water to maintain the water balance, because there is constant loss of water during this period.

COMPOSITION

Calories — 2400

Protein — 70 gms

Fat — 30 gms

CHO — 400 gms

FOOD STUFFS

Cereaal — 390 gm.

Pulse — 50 gms.

Non fibrous

Vegetables — 240 gms.

Fish — 50 gms

Chicken — 50 gms

Fruit — 100 gms

Milk — 10 gms

Sugar — 30 gms

Oil — 20 gms

Egg — 50 gms

Buttermilk — 240 gms.

Menu

Breakfast

White bread — 2 slices (toasted)

Black tea (without milk — 1 cup)

Banana — 1

Egg (poached) — 1

Lunch

Rice, Dhal, Fish Stew

Rice — 200 gms (2 cups)

Dhal — 150 gm (cooked)

Fish stew — 1 cup

Mid-afternoon

Butter milk — 1 glass
Biscuits (Salted) — 4

Dinner

Rice, Chicken, Vegetable soup

3. DIET FOR COLITIS WITH DIARRHOEA

This is a condition of inflammation of the colon, in which there are attacks of diarrhoea with the passage of blood and mucus. There is loss of appetite.

Recent studies have shown that the disease recurred in some patients when cow's milk was reintroduced in the diet. It is likely, that intestinal allergy caused by some foods like milk may be responsible for the disease in some cases.

Dietary Principles

The diet is similar to that used in the treatment of diarrhoea.

Avoid spicy foods, fried foods, and fibre food in order to prevent frequent bowel movements. It should have low fat content. Very cold and very hot food (thermal) should also be avoided in order to prevent irritation of the mucous membrane. A diet rich in protein and carbohydrates with vitamin supplements is required.

Diet for an Adult Suffering from Ulcerative Colitis

Food stuffs	Vegetarian gm.	Non-Vegetarian gm.
Cereals (milled)	200	200
Milk (low fat)	1000	600
Meat and liver	—	100
Egg	—	50
Tender vegetables	50	50
Fleshy fruits (Apple, Banana, Mango, Papaya)	200	200
Fruit Juice	200	200
Cane sugar	05	05
Glucose	50	50

Note: If milk does not agree with the patient, it can be replaced by Soya bean milk (fortified) or by a processed protein food based on Soya Bean and peanut flours. The subject should receive one multivitamin tablet to meet the needs of all vitamins.

If the patient is having severe diarrhoea with blood and mucus and if he feels very sick and he does not like to eat anything solid (due to loss of appetite i.e. 1st stage) give him saline with glucose water to drink. If the patient feels little better after severe diarrhoea, he can be given barley water (i.e. 2nd stage).

As the patient's condition improves, slowly introduce buttermilk with salt, then thin vegetable soup (without spice). When there is no diarrhoea egg flip and semisolid diet like (kanji) may be given. Later bland diet could be given when the patient can tolerate solid food.

4. HIGH RESIDUE DIET

In case of constipation, diverticulum)

Include the following

All whole grain cereals, brown bread, fresh fruits with skin, and vegetables especially all varieties of green leafy vegetables, (salad) Nuts! seeds. Pea-nut butter Coconut Marmalade and Jam with skins and seeds. Spices and condiments. Pulses, corn peas, beans.

IV. THERAPEUTIC DIETS FOR DISEASES OF THE LIVER AND GALL BLADDER

1. INFECTIVE HEPATITIS (JAUNDICE)

Principle in giving diets

1. Fluid diet should be given in place of solid diet because of nausea and loss of appetite. When nausea subsides semisolid food can be introduced.

1. This semi-solid or solid food should be less in fat content.
2. Protein content of this diet should be increased rapidly for recovery of cells.
3. This diet should not be fried or spicy.

Fat should not be given,

CHO should be given liberally, Spicy and fried food-should be avoided

Sample diet (1)

COMPOSITION

Calories — 1500

Protein — 65 gm

CHO — 265 gm

(No fat at all in cooking)

White bread — 6 slices (toasted).

Soft boiled Egg — 1

Skimmed Milk — $\frac{1}{2}$ litre (2 glasses)

Jam or jelly — 1 tbsp.

Sugar — 50 gm (4 tbsp).

Fruit juice — 2 cups

Lean fish or meat — 250 gm

Potatoes or root Vegetables — 250 gm.

(these should be cooked in the form of stew).

This diet should be given in small amounts that are divided into 6 meals. With further improvement of a patient, when the temperature is normal and the appetite is good and when there is no nausea, protein content of diet should be increased.

Sample diet (2)

Low fat, high protein and high CHO

Calories — 2400

Protein — 90 gm

Fat — (20-25 gm)

CHO — 450 gm

Rice or Atta — 240 gm

Bread with jam or marmalade — 4 slices

Pulse — 30 gm

Skimmed milk — $\frac{1}{2}$ litre

Butter or cooking oil — 1 tbsp.

Fruit — 2 servings.

Potatoes or root vegetable (2 medium size)

Green leafy vegetable — 150 gm

Lean fish, chicken without skin or meat — $\frac{1}{4}$ kg.

Eggs — 2 soft boiled or poached (not fried)

Sugar — 4 tbsp.

Diet for an Adult Suffering From Mild to Moderate Jaundice

(Total serum bilirubium below 15 mg.)

Nutritive value of diet

Protein 70 — 80 gm.

CHO 320 — 340 gm.

Total calories 2100 — 2200

Food Stuffs	Vegetarian	Non-Vegetaria
	gm	gm
Cereals	300	300
Pulses	50	—
Milk	800	600
Cheese	50	—
Egg	—	40
Meat or fish	—	50
Vegetables	100	100
Fruits (Banana, Mango, Papaya)	300	300
Fruit Juice	300	300
Sugar and Jam	60	60

Daily Menu for Mild to Moderate Jaundice

Vegetarian

6.00 a.m. (Early morning)

Fruit Juice — 1 glass

Breakfast

Corn flakes with milk and sugar — 1 serving

Toast with jam — 2 slices

Cheese — 2 slices

Fruit

Tea or Coffee

Mid morning

Fruit juice — 1 glass

Lunch

Cooked rice or chappati

Dhal soup

Cooked vegetables

Curd — 2 cups

Fruit or milk pudding

Tea

Biscuits — 2

Fruit juice — 1 glass

Dinner

Cooked rice or chappati

Thick dhal

Cooked vegetables

Curd — 2 cups (cup means katori or vati)

Non-Vegetarian

6.00 a.m.

Fruit juice — 1 glaass

Breakfast

Corn flakes with milk and sugar — 1 serving

Toast with jam — 2 slices

Boiled Egg — 1

Fruit

Tea or Coffee

Mid morning

Fruit juice — 1 glass

Lunch

Cooked rice or chappati

Mutton soup

Minced mutton or fish

Curd — 1 cup

Fruit or

Milk pudding

Tea

Biscuits — 2
Fruit juice — 1 glass

Dinner

Cooked rice or chappati
Meat soup
Cooked vegetables
Curd — 1 cup
Fruit salad.

Diet in Severe Jaundice in Viral Hepatitis for an Adult

Protein — 40—45 gm.
Fats — 25 gm.
CHO — 300—340 gm.
Calories — 1600—1700

FOOD STUFFS

Cereals — 200 gm.
Skimmed milk — 500 ml. ($\frac{1}{2}$ litre)
Potatoes — 100 gm.
Leafy vegetable — 50 gm.
Fruits (Apple Mango, Papaya, Banana) — 200 gm.
Fruit Juice — 100 ml. ($\frac{1}{2}$ cup)
Sugar & Jam — 60 gm.

Sample Menu for Severe Jaundice

6.00 a.m. (*Early morning*)

Fruit Juice — 1 Small glass

Mid morning

Skimmed milk — 1 glass

Lunch

Cooked rice or bread or chappati — 1 serving
Vegetable soup — 1 cup
Cooked Vegetables — 1 serving
Skimmed milk pudding — 1 serving

Breakfast

Corn flakes|wheat flakes with skimmed milk and suga
— 1 serving
Toast with Jam — 2 slices
Fruit — 1 serving
Tea or coffee — 1 cup (with skimmed milk and sugar

Tea

Biscuits — 2
Tea with skimmed milk and sugar

Dinner

Cooked rice or bread or chappati — 1 serving
Thin dhal — 1 cup (To be adjusted to G.I. tolerance)
Cooked vegetable — 1 serving
Fruit — 1 serving

2. DIET FOR CIRRHOSIS OF THE LIVER

Definition

Cirrhosis is a chronic disease of the liver in which increased fibrous connective tissue replaces the functioning liver cells.

Signs and symptoms of cirrhosis of the liver

1. Patient feels very weak
2. Accumulation of fluid in the abdomen (ascites) i.e. in peritoneum.
3. Prominent veins on the walls of abdomen.
4. Nausea, vomiting and pain in the abdomen.
5. Prominent blood vessels on the bridge and ala of the nose.
6. Difficulty in breathing (because lungs and heart always raised up because of fluid accumulation (ascites))

Etiology

1. One cause is the past history of infective hepatitis.
2. Chronic alcoholism.
3. Age : Usually elderly persons
Sex : Male

Usually they are elderly, belonging to higher society.

If diet therapy is initiated early in the case of the disease and if alcohol is withheld, regeneration of liver cells occurs with considerable improvement.

Dietary Principles

1. High protein should be given, since the patient suffers from protein deficiency and has low serum albumin level.

2. RESTRICTION OF SALT : Because fluid is accumulated in the abdomen i.e. ascites, salt must be restricted.

3. Diet should be low in fat, because the liver cells are damaged and the secretion of bile is also less. For the digestion of fat bile is necessary, so fat content should be drastically reduced.

4. Cholesterol content of the diet should be low.

5. Diet must contain lipotropic factor, such as choline methionine, to mobilise the fat (i.e. foods of animal origin are good sources eg. meat, liver.)

6. Vitamin, specially Vitamin B Complex must be supplied in the diet.

Diet for an Adult Suffering from Cirrhosis of Liver

Food Stuffs	Vegetarian	Non-Vegetarian
	gm	gm
Cereals	250	250
Pulses	50	50
Milk (Skimmed)	800	500
Cheese	50	—
Meat or liver	—	100
Eggs	—	60
Calcium caseinate supplement	50	20
Fats or oils (rice in E.F.A.)*	20	20
Vegetable	100	100
Fruits	200	200
Fruit juice	500	500
Sugar	60	60
Glucose	60	60

* E.F.A. — Essential fatty acids found in oil such as sunflower, gingelly, ground-nut oil.

Sample Menu for an Adult Suffering from Cirrhosis of Liver **Vegetarian**

Morning

Tea or coffee — 1 cup
 Corn flakes with milk and sugar
 Bread Toast — 1 or 2
 Cheese — 2 slices
 Skimmed milk — 1 cup
 Fruit

Mid morning

Fruit Juice — 1 glass

Lunch

Bread or cooked rice or chappati
Vegetable, curry with dhal — 1 serving
Cooked vegetable
Curds — 2 serving
Fruits — 200 gm.

Tea

Cheese sandwiches — 1
Fruit juice — 1 glass

Dinner

Cooked rice or chappati
Thick dhal
Cooked vegetable
Curds — 200 ml. (2 servings)
Milk pudding — 1 serving

Non-Vegetarian

Morning

Tea or coffee — 1 cup

Breakfast

Corn flakes with milk and sugar
Toast 1 or 2
Boiled eggs — 2
Skim milk — 1 cup
Fruit

Mid morning

Fruit Juice — 1 glass

Lunch

Bread or cooked rice or chappati
Mutton soup — 1 serving
Vegetable — 1 serving
Mutton or liver curry
Curds — 100 ml.
Fruit

Evening

Mutton sandwiches — 1
Fruit juice — 1 glass

Dinner

Cooked rice or chappati

Thick dhal

Cooked vegetable

Curd — 100 ml. (1 serving)

Milk pudding — 1 serving

Note: Salt should not be added before or after cooking

Principles of Diet in Hepatic Coma

1. Protein should be restricted in the diet. In severe cases there should be complete omission of protein in the diet.

2. Diet should be rich in carbohydrate content special in the form of glucose, lactose and fat content should be restricted.

3. Protein should be restricted by omitting milk to some extent. When there is gradual decrease of urea, the protein content of diet should be increased by 10 gm. of protein.

4. If the patient is unable to take food by mouth, tube feeding may be given.

Diet for hepatic coma

	Amt ml.	Calories	Protein
6 a.m. Orange juice 100 gm. with glucose	200	96	1.4
8 a.m. Arrowroot porridge (tsp. with glucose)	200	30	
10 a.m. coconut water	200	50	
12 Nn. Kanjiwater (thin)	200	55	0.6
2 p.m. Grape juice (100 gm. grapes)	200	50	
4 p.m. Coconut water	200	30	
6 p.m. Vegetable Soup (clear)	200	55	0.6
8 p.m. Grape juice 100 gm. grapes	200	30	
10 p.m. Arrow root porridge with glucose	200	50	
Glucose 120 gms		480	
	200	496	2.6

Note: 120 gms of glucose ie (6 tablespoons) divided and put in fruit juice and other drinks.

3. CHOLECYSTITIS

Principles of Diet

1. Low fat
2. High protein diet
3. CHO should be liberal amounts
4. Vitamins must be supplied in large amounts.
5. Diet should be non-spicy and not fried

Low fat high protein

COMPOSITION

Calories — 2400 gm.

Fat — 20 gm.

CHO — 450 gm.

Protein — 90 gm.

FOOD STUFFS

Rice or atta — 240 gm.

Bread with Jam or jelly — 4 slices

Pulse — 30 gm.

Potatoes (or root veg.) — 120 gm.

Green leafy vegetables — 180 gm.

Fish or Meat — 240 gm.

Egg soft boiled — 2 (not fried)

Skimmed milk — ½ litre

Sugar — 4 tbsp.

Fruits — 2 servings.

Diet for an Adult Suffering from Chronic Cholecystitis

Food Stuffs Per day	Vegetarian	Non-Vegetarian
	gm	gm
Milled cereals and cereal products	200	200
Pulses (dhal)	30	30
Skimmed milk (Fluid)	1000	600
Meat and fish (without fat or oil)	—	50
Potato and tender vegetables	100	100
Fruits	300	300
Fruit Juice	200	200
Sugar	50	50

Sample Menu For Chronic Cholecystitis

Vegetarian

Morning

Fruit Juice — 1 glass (small)

Wheat or corn flakes with skimmed milk

Toast with Jam — 2 slices

Fruit — 1 serving

Tea or Coffee — 1 cup

Mid morning

Fruit Juice — 1 small glass (100 ml.)

Lunch

Cooked rice or chappati — 1 serving

Dhal Soup — 1 serving

Cooked vegetables — 1 serving

Curds — 2 cups (made with skimmed milk)

Fruit — 1 serving

Tea

Biscuits — 2

Fruit — 1 serving

Tea or coffee — 1 cup

(Skimmed milk) — $\frac{1}{2}$ cup (100 ml.)

Dinner

Cooked rice or chappati — 1 serving

Greens with dhal curry — 1 serving

Cooked vegetables — 1 serving

Skimmed milk pudding — 1 serving

Bed Time

Milk drink — 1 cup with sugar

Non-Vegetarian

Morning

Fruit Juice — 1 glass (small)

Corn flakes with skimmed
milk and sugar 1 serving

Toast with Jam — 2 slices

Fruits — 1 serving

Tea or coffee — 1 cup

Mid morning

Fruit juice — 1 Small glass (100 ml)

Lunch

Cooked rice or chappati — 1 serving
Mutton soup — 1 serving
Mutton or fish curry — 1 serving
Curd — 1 cup (made with skimmed milk)
Fruit — 1 serving

Tea

Biscuits — 2
Fruit — 1 serving
Tea or coffee — 1 cup.

Dinner

Cooked rice or chappati — 1 serving
Green curry — 1 serving
Fish molee or minced meat with Vegetable — 1 serving
Skimmed milk pudding — 1 serving

Bedtime

Milk drink — $\frac{1}{2}$ cup skimmed milk with sugar

V. DISEASES OF THE CIRCULATORY SYSTEM

Diet may greatly influence the functioning of the heart and circulatory system. Deficiency of thiamine or calcium may reduce heart efficiency. Overeating leading to obesity puts an extra strain on the heart.

Deposits of cholesterol, and triglycerides found in the arteries lead to atherosclerosis.

In cases of hypertension or heart disease sodium (salt) may be restricted.

1. DIET IN ATHEROSCLEROSIS

Dietary Principles

Low cholesterol and low carbohydrate diets

In order to keep the cholesterol or triglyceride level normal, dietary precautions are :

1. Should cut down animal fats i.e. saturated fats like ghee, butter, meat, egg.
2. Should cut down consumption of refined sugar.
3. Total calorie should be lower than normal.
4. Dietary intake of vegetable oil can include groundnut oil, sesame oil, safflower oil, gingelly oil.
5. Germinated Bengal Gram dhal helps to reduce the Cholesterol.
6. Roughage helps to prevent the absorption of Cholesterol.

The aim of the diet is to correct the ratios of certain fats in the blood. The two fats are cholesterol and triglycerides. Reducing the cholesterol and reducing carbohydrate is one way to help bring those fat levels back to acceptable limits.

Forbidden Foods

Alcoholic drinks

Milk Products

Whole milk with cream.

Whole milk drinks, buffalo's condensed milk, full cream milk powder, cream, cheese, ice-cream.

Meat or alternates

Egg yolk, sausages, bacon, ham, pork, duck, shell fish (including prawns, crabs, lobster shrimps) liver, brain, kidney, heart, sweet bread, all fatty meats.

Fat

Butter, ghee, vanaspathy and other hydrogenated fats, coconut oil, palm oil.

Sweets

All sweets including Chocolate, Toffee, Indian Sweets (eg. Halwa, Jelebee, Coconut sweets) deserts with egg, chocolate flavouring, including pies, doughnuts, cakes, sweets, pudding, milk sweets.

Nuts

Almonds, Cashew nuts, Coconuts, Walnuts.

Miscellaneous

Cream soup, Meat, Gravies, Fried-foods, Salad dressings.

Unrestricted Foods

Salt, Spices, Salted Pickles without oil clear broth, plain vegetable soup, Tomato Juice, Onion, Garlic, Plain Tea, Plain Coffee, Thin Butter milk, Soda Water.

Restricted Food

(Taken in moderate amounts)

Dairy Products

Soya Milk, Thick Butter Milk, Curds

Bread and Cereals

Bread — white and brown, all cereals, Grainproducts such as Noodles, spaghetti and flour.

Vegetables

Potato, Yam, Colocasia, Raw Plantain, Sweet Potato, Carrot, Beetroot, Tapioca, Double Beans, Baked Beans, Sweet corn.

Meat

Tinned meat, Beef, Chicken, Turkey, Fish.

Egg

Egg white

Fat

Unsaturated oils as Saffola, Gingely, Groundnut, Mustard Oil, Corn Oil, (Palm oil is not suitable)

Sweets

Jelly, pudding with skimmed milk, cakes and biscuits — made with allowed fat, skimmed milk and artificial sweetnes, (No egg yolk).

Nuts and Pulses

All pulses and grams, groundnuts, gingelly seeds.

3. LOW SODIUM DIET

Principles of Diet in Hypertension

1. Sodium Restriction. (salt should not be added in cooking)

2. Strong coffee is not permitted.

The following foods are high in Sodium and should be avoided.

1. Salt
2. Baking Powder
3. Bicarbonate of soda
4. Canned Foods
5. Cheese
6. Bacon, ham, sausages.
7. Meat and yeast extracts like marmite
8. Salted chips, nuts, popcorn and Biscuits
9. Pappads — all varieties
10. Pickles
11. Commercial salad dressings and sauces.
12. Soft drinks containing sodium benzoate.
13. Soup cubes.
14. Proprietary drinks — Bournvita and Chocolate drinks

Low Sodium Diet for an Adult Suffering from High Blood Pressure

Food Stuff	Sodium Content (200—300 mg.)		Sodium Content (300—400 mg.)	
	Veg.	Non-Veg.	Veg.	Non-Veg.
	gm	gm	gm	gm
Milled Cereals	300	300	300	300
Pulses (dhal)	50	30	50	30
Skimmed milk (fluid)	400	200	700	400
Meat or Fish	—	40	—	40
Vegetable Oil	30	30	30	30
(Sesame or Safflower oil rich in E.F.A.)				
Butter (unsalted)	10	10	10	10
Green leafy veg.	100	100	100	100
Potatoes	100	100	100	100
Fruits	300	300	300	300
Fruit Juice				
(Orange juice)	400	400	400	400
Sugar and Jam	40	40	40	40

Sample Menu for a Person Suffering Hypertension

Vegetarian

6 00 a.m.

Weak Tea — 1 cup

Breakfast

Bread or corn flakes with milk or Idli with Sugar

Fruits — 1 serving

Weak tea — 1 cup

Mid morning

Fruit Juice — 1 large glass

Lunch

Cooked rice or chappati — 1 serving

Cooked dhal — ½ cup

Curds — 2 serving

Fruits — 1 serving

Skimmed milk pudding — 1 cup

Biscuits — 2

Fruit Juice 1 large glass

Non-Vegetarian

6.00 a.m.

Weak Tea — 1 cup

Breakfast

Bread or

Corn flakes with milk or idli — 1 serving
(with sugar or Jam) without salt

Fruits — 1 serving

Weak tea — 1 cup

Mid morning

Fruit Juice — 1 large glass

Lunch

Cooked rice or Chappati — 1 serving

Meat or fish curry — $\frac{1}{2}$ cup

Curds — 1 serving

Fruits — 1 serving

Skimmed milk pudding — 1 cup

Evening

Biscuits — 2

Fruit juice — 1 large glass

Dinner

Similar to lunch

NOTE : 1. Salt and Soda should not be added in cooking. 2. Strong coffee is not permitted. 3. One multi-vitamin providing the daily requirements of all essential vitamin should be included along with the diet.

4. KEMPNER'S DIET OR RICE BANANA DIET (SALT RESTRICTED DIET)

Ingredients

Rice — 200—250 gm. perday

Sugar — according to taste

Ripe banana — 4—5 Nos.

Procedure

Soft boiled rice is first prepared, bananas are sliced. and put on top of the rice, sugar is put on top or it may be mixed. Fruit juice should be given along with Kemper's diet.

DIET FOR OBESITY

Obesity is the excess of fat storage in area of hip, thigh, buttocks neck and lower abdomen.

Causes

1. Over-eating
2. Lessened physical activities.
3. Psychological eg. Females eat more when they are unhappy.

Dangers of Obesity

Cardio Vascular complications

Coronary artery disease

Congestive heart failure

Atherosclerosis.

Food which may be taken at any quantity

Vegetables

Cabbage, Cauliflower, Pumpkin, Lettuce, Radish, Turnip, Gourds all varieties, greens (all varieties)

Fruits

Lemon, Melons, Cucumber, Black berries, Guavas, Rosambee, Grape fruit and Oranges.

Beverages

Water, Soda water, Tea (without sugar), Coffee (without sugar), clear soup prepared out of lean meat, tomato juice, grape juice.

Miscellaneous

Vinegar, Spices, Saccharin.

Foods to be avoided

Sugar, Coffee, Chocolate, Custard Powder, Jam, Marmalade, Honey, Dried fruits, Raisins, Apricots (dried) Dates, Tinned fruits, Cakes, Buns, Pastries, Milk pudding, Beet root, Tapioca, Sweet potatoes, Cocoa, Ovaltine, Horlicks,

Bournvita, Ice-cream, Sweet pickles, Beer, Wine, Sherry all fried foods, Fats and oil.

Note : Rice, wheat flour, potatoes should be taken in smaller quantity than usual.

Dietary Principles in Obesity

1. Calorie intake should be restricted
2. Protein should never be reduced in the diet. (1 gm per kg of body weight)
3. Fat should be restricted especially the animal fat
4. Refined Sugar : should not be given to the patient
5. All types of sweets should be restricted. Diet sheets are prepared according to the various Calorie intake

(See Diabetic Diets of 1000 Calories, 1200 calories, 1400 calories).

1000 Calorie Diet : Is a special diet for those who are over weight, and particularly those suffering from heart failure, hypertention, osteoarthritis.

Note : In case of drastic reduction of 1000 calories the body fat will be mobilized and oxidised but there may be chances of Ketosis in the body which poisons the blood thereby the person suffers from mental disturbance, or unconsciousness. For this reason person must be under doctor's observation.

DISEASES OF KIDNEY

Dietary control plays an essential part in the successful management of renal diseases. The specific nutrients namely, Protein, Sodium and potassium must be considered in the renal diet and also calories and fluid intake should be considered. In renal failure there will be accumulation of urea in the body causing a toxic condition.

Protein

Protein is important in the make up of every cell in the body. The protein that we eat is digested and used for different body functions and it is finally broken down to the major end products called Urea. This urea must be eliminated by our kidney.

However, when the kidneys are damaged the urea is not properly eliminated but accumulate in the body causing a toxic condition known as Uremia, which makes a person feel very miserable. So by restricting and controlling the intake of dietary protein and giving adequate fat and carbohydrates in the diet, less urea will be formed.

Protein should be restricted only while kidneys are impaired and urine output is reduced.

At the onset of acute nephritis the excretion of urine is less so protein should be restricted as long as the urine output is reduced but fats and carbohydrates are not restricted.

If urine output is 500-700 ml/day give 0.5 gm protein/kg body weight (ie. a 55 kg man should have 27.5 g protein only) however when urine flow is normal protein intake should be increased to about 60 gm protein daily. Vitamin C and B Complex may also be given. Sodium and potassium intake should also be restricted as long as oedema is present sodium should be reduced, by limiting fruit juice or vegetable soup. Potassium intake is restricted as long as urine output is subnormal.

While urine output is less fluid should be reduced to 1000 ml, fluid intake should be equivalent to urine output. All fluids such as milk, tea, coffee, soups, juice and drinks of any kind should be measured and be within the limited requirement.

Restricted foods

Animal foods such as meat, fish, poultry, pork and eggs contain large amounts of protein and need to be taken in limited amounts only. Milk and milk products, legumes and nuts, cereals and some vegetables which are higher in protein should also be limited. Therefore the following exchange lists have been worked out to the amount of allowed protein as prescribed per day.

PROTEIN EXCHANGE LIST (PER DAY)

Meat

	Protein	Calories
Meat — 30 gm	6.5	65
Liver — 30 gm	6.5	50
Chicken — 25 gm	6.5	30
Pork — 30 gm	6.5	40
Egg — 1	6.5	86
Beef — 30 gm	6.5	40
Fish average — 25 gm	5.0	45

Milk

Milk — 100 ml	3.0	67
Curds — 100 ml	3.0	60
Butter milk — 400 ml	3.0	60
Skimmed milk — 100 ml	3.0	29
Cheese — 15 gm	3.0	52
Cottage Cheese — 15 gm	3.0	40

Cereal

Rice — 50 gm	3.0	173
Ragi — 50 gm	3.0	164
Wheat — 25 gm	3.0	85
Suji — 25 gm	3.0	87
Oats — 25 gm	3.0	94
Bread — 3 slices	3.0	82
Rice flakes — 50 gm	3.0	173
Puffed rice — ½ cup	3.0	108

Since the following foods are also high in protein and may be avoided during the time of the restricted diet.

Vegetables such as double beans, peas, baked beans, corn, soyabeans and soya products, protein concentrates such

Complan, protinules, santogen. All foods containing animal products, legumes, and nuts should be taken in limited amounts.

Sodium

Sodium is an essential mineral. Generally any excess sodium is excreted by the kidneys. But if the kidney function is impaired due to the damage of the kidney, the kidney may retain than eliminate the excess sodium, thus causing fluid retention resulting in oedema, therefore, sodium in the diet needs to be limited.

The following foods are high in sodium and should be avoided in low Sodium diets.

1. Salt
2. Baking powder
3. Bicarbonate of Soda
4. Cheese
5. Bacon, Ham, Sausages
6. Meat and yeast extracts like marmite
7. Salted chips, Nuts, popcorn and biscuits
8. Pappad — all varieties
9. Salted pickle
10. Commercial salad, dressing and sauces
11. Soft drinks containing sodium benzoate
12. Soup cube
13. Proprietary drinks (Bournvita, Horlicks).

Potassium

Potassium is an another mineral which is naturally found in foods and is high in most vegetables and fruits. Any excess of potassium is excreted by the kidneys unless they are not functioning as they should; and then harmful levels of, Potassium can build up and cause problems. It is necessary that restriction of Potassium intake in Kidney disease is very important, so those with medium content may be used in very small amounts only.

Potassium in 100 gm. Vegetable

Low	Medium	High
0—100 mg	107—200 mg	201 mg and above
Fenugreek leaves	Onion small	Amaranth
Lettuce	Cabbage, Carrots	Corriander leaves
Beet root	Radish white	Celery leaves
Radish pink	Bitter gourd	Drumstick leaves
Bottle gourd	Brinjal	Spinach
Broad beans	Cauliflower	Colacasia
Tender field beans	French beans	Potato
Cucumber	Onion stalks	Sweet potato
Knol Khol	Plantain Flower	Tapioca
Peas	Green plantain	Yam
Ridge gourd	Pumpkin	Drumstick
Snake gourd	Green tomato	Sword beans
Chow Chow	Ladies fingers	(very high)
		Green papaya

Note : All vegetables must be soaked in warm water for 3 hours before cooking.

Discard soaking water and cook in a large Volume of fresh water.

The purpose of this procedure is to leach out the large amount of potassium contained in the vegetables.

Fruits Potassium in 100 gm

Low	Medium	High
Apples	Jack fruit	Amla
Banana	Water melon	Apricot
Guava	Pomegranate	Cape gooseberry
Oranges	Ripe tomato	cherries
Papaya	Lichis	Sweet lime
Pears		(Mosambe)
Pineapple		Plums
		Mango
		Sapota
		Seethapal

Avoid following foods high in potassium

Nuts, Jaggery (Brown sugar), instant coffee, Chocolate and Cocoa powder .

ephrotic Syndrome

Characterized by protenuria and oedema and lowered serum albumin, Volume of urine excreted may be normal.

ietary management

Because protein is being lost through the Urine, and serum albumin is lowered and protein in the tissues is being depleted, a high protein diet (1.5—2.0 gm protein kg body weight) is advised. Skim milk powder may be added to fruit juice or to the flour used in making chappatis. Groundnuts, dal, bengal gram flour (besan) may also be used to increase the protein content of the diet. Vitamin C and B Complex supplement may be given.

Sodium should be restricted while oedema is present by not using salt in cooking or on the table. Other foods high in sodium should also be avoided (see list of foods high in sodium)

DIABETIC DIETS

This diet is as close to the normal diet as possible as to meet the nutritional need and the treatment of individual patient. This diet is lower in carbohydrates and adequate in other food principles.

Dietary Principle

Foods which are high in carbohydrate should be avoided or taken in very limited quantities. These foods are :

1. Roots and tubers
2. Sweets, puddings, bakery products and chocolate
3. Fried foods
4. Dried fruits such as dates, raisins
5. Sugar
6. Fruits like banana, sapotas, custard apple etc.

In diabetes, diet plays a vital role in the treatment. The diet instructions must be followed diligently. Meals need not be monotonous or unappetizing. For the most part, a diabetic patient will eat the same foods as the rest of the family.

The foods allowed should be selected from the food exchanges as listed in the appendix. This allows selection of a wide variety of foods from each exchange. Do not add or omit any food allowed in the meal plan.

In an exchange list one may choose any **ONE** item equivalent to **one** exchange. eg. - cereal exchange means 25 gms uncooked rice OR 25 gms atta (whole wheat flour) OR 3 exchange means 75 gm uncooked rice, or 75 gms atta (ie. 3 small chappatis)

At first you should measure all food to be sure of the amounts. Use a standard 250 ml measuring cup or standard 5 ml. spoon measured after cooking. Later you will be able to visualize the size of portion without measuring. Seasoning and frying of all food should be within the allowance.

Food to Avoid

Sugar	Jams	Horlicks *
Glucose	Jellies	Bournvita
Honey	Preserved fruits	Chocolate drinks
Syrup	Dried fruits	Chocolates
Jaggery	Aerated drinks	Proprietary drinks
Sweets	Cake	Free Food
Halwas	Pastries	
Burfies	Candy	

Free Foods

Clear soups	Skimmed butter milk
Gelatin (Unsweetened)	Unsweetened lime juice
Lemon	Tomato juice — 1 small glass
Salted Pickle with no oil	Soda water
Flavouring extracts	Raw vegetable salads
Pepper water	Soup cubes
Plain Coffee or tea (without sugar)	Salt

Onion, Mint, Pepper garlic, curry leaves, corriander, vinegar, Mustard and spices.

Artificial sweetners may be used, if advised by the Physician. eg. Saccharin, Cyclamate, Aspartain.

Diets of different calorie levels have been worked out based on the exchange system. See appendix for exchange lists. These may also be prescribed for persons requiring restricted calories such as those who are obese.

Diabetic diets of 1000 calories, 1200 calories, 1500, 1800, 2400 calories are prepared. Sample diets.

1000 Calorie Diet

Protein — 44 gms (17.5% Calories)
Carbohydrate — 125 gms (52% calories)
Fat — 34 gms (30.5% calories)

Daily Exchanges

Cereal — 4 exchanges
Protein — 2 exchanges (1 Non veg., 1 Soyabean)
Milk — 2 exchanges regular
 2 exchanges skim milk
Vegetable — 2 exchanges
Fruit — 1 exchange
Fat — 3 exchanges

Daily Meal Pattern

Vegetarian

Sample Menu

Non-Vegetarian

Breakfast

Milk — 1/2 exchange
 Cereal — 1 exchange
 Fruit — 1 exchange
 Fat — 1 exchange

Ragi Kanji with 50 ml. milk *
 1 small orange
 Black Tea|Coffee
 (No sugar but artificial sweetner may be used).

Mid-morning

Beverage — See list of free foods

Lime juice and water (Salt)

Lunch

Cereal — 2 exchanges
 Protein — Non veg. — 1 exchange
 Vegetable Salad — 1 exchange
 Fat — 1 exchange
 Skim milk — 1 exchange

Fish curry (75g, fish)
 2 chappatis (without oil)
 or 200 ml. cooked rice
 Vegetable Preparation Salad
 Skim milk — 100 ml

Tea

Milk — 1/2 exchange
 Soya snack — 1/2 exchange

Tea with 50 ml milk
 15 g. Puffed Bengal gram

Dinner

Cereal — 1 exchange
 Protein vegetable — 1/2 exchange
 Vegetable Salad — 1 exchange
 Milk — 1 exchange

Chappati— 1 (without oil) made with 25 g.
 wheat flour and 10 g. soya flour.

Vegetable Preparation Salad
 Curd — 100 ml

Bed time

Skim milk — 1 exchange

100 ml — skim milk

1200 Calorie Diet

		g.	%
Protein	—	42	14
Carbohydrate	—	212	69
Fat	—	23	17

Daily Exchanges

Cereals	7
Protein Food	2
Milk	2
Vegetable	3
Fruit	1
Fat	1

Basic Meal Pattern

Early morning

Tea|Coffee + Milk $\frac{1}{4}$ exchange

Breakfast

Cereal — 2 exchanges
Milk — $\frac{1}{2}$ exchanges
Vegetable — 1 exchange

Mid-morning

Fruit — 1 exchange

Lunch (Noon meal)

Cereal — 2 exchanges
Protein — 1 exchange
Vegetable — 1 exchange
Milk — $\frac{1}{2}$ exchange
Salad — as desired.

Afternoon Tea

Cereal — 1 exchange
Milk (for Tea|Coffee) 1 exchange

Evening Meal

Cereal — 2 exchanges
Protein — 1 exchange
Vegetable — 1 exchange

Note : 1 S. Spoon (5 ml.) oil may be used in total cooking for the day.

1200 Calorie Sample Menu

Vegetarian

Tea|Coffee with 25 ml. milk

2 Idlis

Vegetable sambar

Tea|Coffee — 50 ml. milk

1 medium orange

Rice (200 ml.)

OR

2 chappatis (without oil)

1 small katori thick dal

1 vegetable

Salad — as desired

Curd — 50 ml. (½ katori)

4 small salt biscuits (crackers)

Tea|Coffee with milk (25 ml)

2 chappatis (no fat)

1 small katori dal or sambar

vegetable — one serving

Non-Vegetarian

Early morning

Bed Tea|Coffee with 25 ml. milk

Breakfast

2 plain chappatis (without oil)
with vegetable curry,

Tea|Coffee with 50 ml. milk

Mid-morning

1 medium orange

Noon Meal

2 plain chappatis or 200 ml cooked rice.

Egg, Fish or Meat curry (1 egg)

Meat curry (1 egg)

50 ml. curds

Vegetable

Salad — as desired.

Afternoon

4 small salt crackers

Tea|Coffee with 25 ml milk

Evening Meal

2 chappatis (no fat)

1 small katori thick dal

vegetable — one serving

Note: Only 1 S. Spoon fat may be used in cooking for whole day.

1500 Calorie Diet (approximately)

Vegetarian	Non-Vegetarian	
	Grams	%
Protein	52	14
Carbohydrate	244	65
Fat	40	21

Daily Exchanges

Cereal	8
Protein Foods	2
Milk	2
Vegetable	3
Fruit	1
Fat	4

Basic Meal Pattern

Bed Coffee with 1/4 milk exchange	Bed coffee with 1/4 milk exchange
Breakfast	
Cereal — 2 exchanges	Plain coffee tea (without Sugar)
Milk — 1/4 exchange (25 ml)	milk — 1/4 exchange
Vegetable — 1 exchange	Indian prep — 50 gm
Fat — 1 exchange	Banana — 1 medium
	Fat — 1 exchange

Mid-morning

Fruit juice from — 1 fruit

Lunch

Cereal (rice) 75 gm (250 gm cooked)
Non-Veg. — 50 gm
Vegetable A — 1
Curds — 100 ml ($\frac{1}{2}$ cup)
Sambar — 100 ml ($\frac{1}{2}$ cup)
Fat — 1 exchange

Afternoon Tea

Indian preparation — 15 gm pulse
Plain coffee or tea
Milk — $\frac{1}{2}$ exchange
Fat — 1 exchange

Dinner

Cereal — 50 gm (150 gm)
Vegetable A — 1 exchange
Vegetable B — 1 exchange
Curds — 100 ml
Rasam
Fat — 1 exchange

1 fruit

Cereal — 3 exchanges
Protein — 1 exchange
Vegetable — 1 exchange
Salad — as desired
Milk — 1 exchange
Fat — 1 exchange

1 Cereal Exchange

Tea

$\frac{1}{2}$ Milk Exchange

1 Fat Exchange

Cereal — 3 exchanges

Protein — 2 exchange

Vegetable — 1 exchange

Salad — Free vegetable list

Fat — 1 exchange

Sample Menu (1500 Calories)

Vegetarian

Bed Tea|Coffee with 25 ml. milk (No sugar)

Non-Vegetarian

Bed Tea|Coffee with milk (25 ml)

Breakfast

2 Idlis Sambar
Tea|Coffee with 25 ml. milk

2 plain chappatis (without oil)
Vegetable

Tea|Coffee with 25 ml milk

Mid-morning

1 piece papaya

a small orange

Lunch

1 small katori (100 ml.) rice
2 chappatis (no fat) { Or 2 Katoris rice &
Sambar { 1 chappati

1 small katori (100 ml) rice
2 chappatis (without oil) or
Egg or Fish curry

Vegetable Dish
Salad

Vegetable Salad
Curd — 100 ml

1 Small katori (100 ml) Curd
1 S. Spoon oil for cooking

1. S. Spoon oil for cooking

Afternoon Tea

2 small slices
whole wheat bread
1½ C. Peanut butter
Tea with 50 ml. milk

Small tomato Sandwich
Tea with 50 ml. milk

Dinner

2 small
masala dosai
Vegetable — Salad
tomoto juice
1. S. Spoon oil|ghee used in cooking

3 chappatis(without oil)
1 katori dal
Vegetable — Salad — as desired
1. S. Spoon oil|ghee used in cooking

1800 Calorie Diet

Vegetarian	Non-Vegetarian		
	Gm	Gm	%
Protein	64	56	12
Carbohydrate	265	290	64
Fat	51	48	24

Daily Exchanges

Cereals — 10 exchanges*
 Protein Foods — 3 exchanges*
 Milk — 2 exchanges
 Vegetables — 3 exchanges
 Fruit — 1 exchanges
 Fat — 5 exchanges

Cereals — 11 exchanges
 Protein Foods — 3 exchanges
 Milk — 2 exchanges
 Fruit — 1 exchange
 Fat — 5 exchanges

* Because pulses contain considerable CHO the cereal exchange is reduced by one in the vegetarian diet.

Basic Meal Pattern

Bed Tea Coffee with 1/4 milk exchange . . .	Bed Tea Coffee with 1/4 milk exchange
<i>Breakfast</i>	
Cereal — 2 exchanges	Cereal — 3 exchanges
Protein — 1 exchange	Protein — 1 exchange
Vegetable — 1 exchange	Vegetable — 1 exchange
Milk — 1/2 exchange	Milk — 1/2 exchange
Fat — 1 exchange	Fat — 1 exchange

Mid-morning

Fruit — 1 exchange

Noon Meal

Cereal — 3 exchanges
Protein — 1 exchange
Vegetable — 1 exchange
Salad — free vegetables
Milk — 1 exchange
Fat — 3 exchange

Tea

Cereal — 1 exchange
Fat — 1 exchange
Milk — ½ exchange
Tea|Coffee

Dinner

Cereal — 3 exchanges
Protein — 1 exchange
Vegetable — 1 exchange
Fat — 2 exchanges

Fruit — 1 exchange

Cereal — 3 exchanges
Protein — 1 exchange
Vegetable — 1 exchange
Milk — 1 exchange
Fat — 3 exchanges

Cereal — 1 exchange
Fat — 1 exchange
Milk — ½ exchange
Tea|Coffee

Cereal — 3 exchanges
Protein — 1 exchange
Vegetable — 1 exchange
Fat — 2 exchanges

Suggested Menu (North Indian)

Vegetarian

Non-Vegetarian

Breakfast

2 chappatis made with wheat flour
+ 10 gm. Soya flour and

3 chappatis (small size) with
15 g. Soya flour (without oil)

Vegetable curry

Tea|Coffee with 50 ml. milk

1 S. Spoon oil in cooking

1 small orange, or guava

Rice — 1 small katori (100 ml)

Chappati — 2 (without oil)

Dal with ghee vegetable

Curd — 100 ml. (2½ cup)

(3 S. spoons oil used in preparing curry)

2 small slices bread

1 S. Butter

with tomato

Sandwich

Tea with 50 ml. milk

3 chappatis (without oil)

1 serving dal

Vegetables

Salad

(2 S. spoon oil can be used

in preparing food)

Vegetable curry

Coffee|Tea with 50 ml cooking

1 S. Spoon oil for cooking

Mid-morning

1 small orange

Lunch

Rice — 1 small katori (100 ml)

Chappati — 2 (without oil)

Meat curry —

Vegetable curry —

Curd — 100 ml (2½ cup)

(3 S. spoon oil to be used in cooking)

Afternoon Tea

2 plain biscuits (Marie)

Tea with 50 ml milk

Dinner

3 chappatis without oil — or rice

Dal — 1 serving

Vegetable dishes

Salad

(2 S. spoon oil can be used in preparing food)

Vegetarian

3 Idli Sambar
Coffee with 50 ml. milk

1 small banana

Rice — 1 small katori (100 ml)
Chappati — 2 (without oil)
Sambar — (made with 25 g dal)
Vegetable — (10g. fat used in cooking)

1 small plain dosai, Chutney
Tea|Coffee with 50 ml

Rice — (50 ml)
Chappati — 2 ,no fat)
Sambar
2 vegetables
(10 g. fat used in cooking)

Non-Vegetarian

Breakfast

Ragi, Kanji made with 50 g ragi flour
Or Ragi Roti
Coffee made with 50 ml. milk.

Mid-morning

1 cereal exchange
e.g. 2 plain biscuits
12 grapes.

Lunch

Rice — 1 small katori (100 ml)
Chappati — 2 (without oil)
Meat curry or egg curry
2 vegetables
Curd — 100 ml
(10 g. fat used in cooking)

Afternoon

1 plain small dosai Chutney
Tea|Coffee with 50 ml milk.

Dinner

Rice (50 ml)
Chappati — 2 (no fat)
Sambar
2 vegetables
(10 g fat used in cooking)

2400 Calorie Diet

	Gms	% of calories
Protein	89	14.5
Carbohydrate	326	54.5
Fat	82	31

Daily Exchanges

Cereal — 11 exchanges
Protein — 5 exchanges
Milk — 3 exchanges
Vegetables — 3 exchanges
Fruit — 1 exchange
Fat — 9 exchanges.

Daily Meal Pattern

Early Morning

Tea|Coffee milk $\frac{1}{4}$ exchange

Breakfast

Cereal — 3 exchanges
Protein — 1 exchange
Milk $\frac{1}{2}$ exchange
Tea|Coffee (no sugar)
Fat — 2 exchanges

Mid-morning

Cereal — 1 exchange
Protein — 1 exchange

Noon Meal

Cereal — 3 exchanges
Protein — 2 exchanges
Vegetable — 1 exchange
Salad — as desired
Fruit — 1 exchange
Milk — 1 exchange
Fat — 3 exchanges.

Afternoon

Cereal — 1 exchange
Fat — 1 exchange
Milk — $\frac{1}{4}$ exchange

Evening Meal

Cereal — 3 exchanges
Protein — 1 exchange
Vegetable — 1 exchange
Fat — 3 exchanges
Milk — 1 exchange.

2400 Calorie Diet Sample Menu

Vegetarian

Bed Tea or Coffee with milk
(no sugar)

3 Idlis

Sambar

Tea|Coffee with 1½ c. milk

2 small slices of bread
Spread with peanut — butter
or — 55 groundnuts

Noon Meal

1 — 100 gm serving cooked rice
2 — Chappatis (with ghee) made with
50 g. wheat 10 g. Soya Flour
Sambar — or dal
Vegetable Curry — 1 serving
Salad — as desired
Curd — 2½ cup
1 medium guava

Non-Vegetarian

Early morning

Bed Tea or coffee (25 ml. milk)
without sugar

Breakfast

1 egg
3 chappatis (without oil)
2 S. Spoons ghee (on chappatis or
used in cooking egg)

Mid-morning

Free Beverage
eg. Tomato juice (small glass)
4 plain crackers
1 cheese cube

Noon Meal

1 small katori (100 ml) rice
2 chappatis (without oil)
Meat Curry (120 m. meat)
Vegetable Curry
Salad as desired
Curd 2½ cup
1 medium guava or fruit in season (see list)

Afternoon

1 small dosai (plain)
Tea with milk

Two small slices bread with butter
Tea|Coffee with 25 ml. milk

Night Meal

Curd Rice
made with 75 g. raw rice. & 2½ c. curd
Groundnuts 1½ cup
1 Vegetable Dish
(Use 2 S. Spoons oil in preparation)

3 chappatis (without oil) with Dal
Vegetable Curry
(3 S. Spoons fat may be used in cooking)
2½ c. milk or curd

GOUT

Definition

Gout is considered a metabolic disorder resulting from defective uric acid metabolism. Serum uric acid levels are raised or there is excess accumulation of uric acid in the body.

Causes

1. Infection like sore throat, eczema, development of rashes, allergy, or septic teeth is usually an associating factor.
2. Diet containing purine bodies also aggravates the disease. Purines are found in liver, kidney, sweet breads, sardines, meat extracts.
3. Chronic alcoholism
4. Hyperacidity

Dietary Principles

The diet should have a low purine content. Foods rich in nucleic acid and nucleo proteins eg. Meat, fish and other animal tissues) should be avoided.

Protein and Purines

The protein intake should be between 40-50 gm for an adult. Protein should be derived from cereal, milk and eggs. Meat, fish and other animal tissues should be avoided as they are rich in purines and nucleic acid.

Fat

Fat consumption should be restricted, as high fat intake tends to decrease uric excretion in urine.

Carbohydrate

During an attack of gout, the main source of calories should be from Carbohydrates.

Fluid

Liberal intakes of fluids should be advised as it helps to increase the volume of urine and this facilitates the excretion of uric acid.

Sample Menu (Gout)

Vegetarian

Non Vegetarian

Breakfast

Chappatis with Marmalade or
Corn flakes with 1 cup
milk and sugar
Orange — 1
Tea or Coffee

Toast or Chappati with
Marmalade
Poached egg 1
Orange — 1
Tea or Coffee

Lunch

Rice with dal,
 $\frac{1}{2}$ cup butter milk
Mixed vegetables — Salad

Roast chicken
(Small serving)
Rice or chappati
Mixed vegetables curry

4.00 p.m.

Biscuits or groundnuts
Tea

Biscuits or groundnuts
Tea

Dinner

Tomato soup 1 cup
Chappatis or bread
Mattar Panir
Vegetable Salad
Jellabi

Chappatis
Thick Dal
Sag — (Greens)
Custard pudding

APPENDIX — EXCHANGE LISTS

Milk Exchange

Each of the following portion of milk exchange contains.
Protein 3 g, Carbohydrate 4 g, Fat 4 g, Calories 65
1 standard cup is 250 ml. or $\frac{1}{4}$ litre.

Food	Quantity
Cow's milk	100 ml $1\frac{1}{5}$ cup
Buffalow's milk	50 ml $1\frac{1}{5}$ cup
Curds	100 ml $2\frac{1}{5}$ cup
Skimmed milk	250 ml 1 cup
Skimmed milk powder	3 spoon
Thick Butter milk	$4\frac{1}{5}$ cup

Meat Exchange

Each meat exchange contains : Protein 15 g, Carbo-
hydrate — nil. Fat 6 g, Calories 85—100

Food	Quantity
Beef	75 g ($\frac{1}{4}$ pau) (1 pau = $\frac{1}{4}$ kg)
Chicken	75 g (100 gm if bone included)
Liver	75 g
Pork muscle	75 g
Egg (hen)	1 large
Egg (Duck)	1
Meat (Mutton)	50 gm
Fish	75 — 100 gm

Dhal Exchange

Each exchange contains : CHO 15 g, Protein 6, Calories
85, fat negligible

Food	Quantity
Pulses	Uncooked 25 g ($\frac{1}{2}$ cup cooked)
Legumes	25 g ($\frac{1}{2}$ cup cooked)
Roasted groundnut	15 g

Cereal Exchange

Each cereal exchange contains : Protein 1—3 g, Carbohydrate 18—21 g, Fat negligible, calories 85

Food	Quantity
<hr/>	
Uncooked Foods	
Rice	25 g
Wheat Rava (Dalia)	25 g
Broken rice	25 g
Suji	25 g
Oats	25 g
Vermicilli	25 g
Wheat flour	25 g
Rice flour	25 g
Arrow Root	25 g
Sago	25 g
Flakes	25 g
Cooked Foods	
Rice	½ cup
Idli	1 medium
Dosai	1 medium
Uppuma	½ cup
Noodles Spaghetti	½ cup
Potato	100 g (1 medium)
Yam	75 g (1 small)
Colocasia	100 g
Sweet potato	75 g
Tapioca	50 g
Bread	2 small half inch slices.

Vegetable exchange A

These vegetable may be used as desired, carbohydrates and calories are low. Each exchange — $\frac{1}{2}$ cup cooked vegetable contains : CHO — upto 6%. Calories — 30.

Leafy Vegetables

Amaranth
Bathua
Brussels sprouts
Cabbage
Celery
Coriander leaves
Curry leaves
Fenugreek leaves
Lettuce
Mint
Rape leaves
Spinach
Soya leaves
Sirukeera
Parupukeerai

Other Vegetables

Ash gourd
Bitter gourd
Brinjal
Calabash Cucumber
Cauliflower
Cho-Cho (Marrow)
Cucumber
Drumstick
French beans
Knol-khol
Ladies fingers
Mango, green
Onion stalks
Parwar
Plantain flower
Pumpkin
Radish
Rhubarb stalks
Ridge gourd
Snake gourd
Tinda
Tomato, green
Turnip

Vegetable Exchange B

Each exchange — $\frac{1}{2}$ cup cooked vegetables, contains :
CHO — 6—12%, Calories 50—60, Protein 2—3 g.

Root Vegetables

Quantity (g)

Beetroot	75
Carrot	105
Colocasia	45
Onion, big	90
Onion, small	75
Potato	45
Sweet potato	30
Tapioca	30
Yam (elephant)	60
Yam	45
Raddish pink	100
Turnip	110 gm

Other Vegetables

Broad beans	90
Cluster beans	90
Double beans	50
Jack, tender	105
Jackfruit seeds	30
Leeks	60
Peas	45
Plantain, green	75
Singhara	45

Fruit Exchange

Each fruit exchange contains CHO — 10 g, Calories — 40, Protein and fat negligible.

Fruit	Quantity
Amla	4—5
Apple	1 small (2" diam)
Apricots	2 fresh
Banana	1 small
S. India small Plantain	1
Custard Apple	1 small
Dates	2
Grapes	12 medium
Grapefruit	1 small
Guava	1 medium size
Jack fruit	2—3 pieces
Jambu	10 small
Melon	1 slice (200 gm) or ½ c. pieces
Orange	1 average
Papaya	2" x 3" slice or ½ c. Pieces
Peach	1 medium
Pear	1 small
Pine apple	1 slice (Small)
Plums	2 small
Sapota	1 small
Straw berries	1 cup
Sweet lime	1 medium size
Water melon	1 slice (200 g) or 1 cup
Mango	1 small

Fat Exchange

Each fat exchange contains Fat 10 g, calories 90, Protein and Carbohydrate nil.

Fat	Quantity
Oil (Any variety)	10 g (2 spoon)
Ghee	10 g (2 Spoon)
Butter	12 g (2½ Spoon)
Vanaspathi	10 g (2 spoon)
Margarine	10 g (2 spoon)
